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10/682,223	10/09/2003	Mark A. Schubert	SP-1665.1 US	8111
20875 7590 09/23/2008 MICHAEL C. POPHAL EVEREADY BATTERY COMPANY INC 25225 DETROIT ROAD P O BOX 450777 WESTLAKE, OH 44145				
EXAMINER				
CHU, HELEN OK				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

## Application No.

10/682,223

## Applicant(s)

SCHUBERT ET AL.

## Examiner

Helen O. Chu

## Art Unit

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date 8/20/08
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. Applicants' Remarks/Arguments have been received on June 23, 2008. No amendment has been submitted.
2. The text of those sections of Title 35, U.S.C. code not included in this action can be found in the prior Office Action.

### ***Claim Rejections - 35 USC § 102***

3. The rejections under 35 U.S.C 102(e), on claims 1, 2, 6-9, 11, 12 are maintained. The rejections are repeated below for convenience.
4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 2, 6-9, 11 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Shubert et al. (US Publication 2003/0118902 A1).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in

the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Regarding claims 1, 2 and 6, the Shubert et al reference discloses an electrochemical cell comprising a metal container (P 1) with an opening and a metal cover (P 37). The electrochemical cell contains a positive electrode, a negative electrode a separator disposed between the positive and negative electrode, an electrolyte (P 37). The Shubert et al. reference also discloses a seal member that may seal the opening between the container and the metal cover as illustrated in Figure 1 (Applicants second seal member) and may also be one that includes a pressure relief mechanism (P 44) . The thermoplastic seal member made of more than 30 percent of polyolefin (Applicants thermal-stabilizing filler) balanced aromatic polymer (Applicants thermoplastic resin) such as polyphenylene sulfides.

Regarding claims 7-9, the Shubert et al. reference disclose that the pressure relief mechanism includes vent ball (Applicant's plug) and a vent bushing which can be a seal member according to the present invention of seal member (P 43, component 48) which takes a form of hollow cylindrical shape as illustrated by Fig. 5

Regarding claim 11, the Shubert et al. reference illustrates the vent ball is within the aperture in the first metal cover.

Regarding claim 12, the Shubert et al. reference discloses a nonaqueous electrolyte (P 42).

***Claim Rejections - 35 USC § 103***

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6. The rejections under 35 U.S.C 103(a), on claims 1-15, 18, 20-22 are maintained.

The rejections are repeated below for convenience.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-15, 18, 20-22 are rejected under 35 U.S.C. 103(a) as unpatentable over Zupancic (US Patent 4,592, 970) in view of Malay et al. (US Patent 6,468,691) in further view of Doose (U.S. Patent 4,580,790).

Regarding claims 1-5 and 18, 20, 21, the Zupancic reference discloses an electrochemical cell with a metal container which includes a lid can be stainless steel (Col. 7, Li 35-40). The electrochemical cell have a positive electrode, negative electrode, a separator disposed in between and electrolyte (Col. 8, Li 15-67). The Zupancic reference further discloses a pressure relief vent member with orifice, a corrosion-resistant polytetrafluoroethylene liner in which a ball (Applicant's plug) is placed and sealant in between the liner and orifice (Abstract, Applicants first thermoplastic seal member) which seals an aperture within the container and the cover ( Fig. 1). The Zupancic reference discloses that the sealant is made of a chlorotrifluoroethylene resin (Col. 4, li 1-5). The sealant is disposed between the walls of the orifice and liner to prevent leakage of the electrolyte at the interface (Col. 3, li 60-68). Many electrolyte have a propensity for creepage along component parts of cells and eventually finds a path outside of the cell (Col. 3, lines 60-68). The Malay et al. reference

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discloses a problem arises with electrochemical cells where electrolyte have a high affinity for wetting metal surfaces and are known to creep through the sealed surfaces of an electrochemical cell (Col. 1, lines 20-30) Leakage in this manner can also cause a corrosive deposit on the surface of the cell. To obviate this problem an improved compressible sealing gasket is provided (Col. 10-20). The gasket as disclosed by the Malay reference comprises a polymeric material such polytetrafluoroethylene, fluorinated-ethylene polypropylene, chlorotrifluoroethylene, polyvinyls and can also include a filler made of glass (Applicant's thermal-stabilizing filler) to modify the sealing properties of the gasket (Col. 7, lines 25-40) such capabilities of withstanding pressure forces of 2000 -3000 psi. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate a sealing gasket with improved compressibility as disclosed by the Malay reference into the vent member as disclosed by the Zupancic reference in order to prevent electrolyte and corrosion improving the overall marketability and effectiveness of the electrochemical cell. Additionally, the substitution of known equivalent structures such as polytetrafluoroethylenes and chlorotrifluoroethylene involves only ordinary skill in the art. *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *In re Ruff* 118 USPQ 343 (CCPA 1958). When a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result. **KSR v. Teleflex**. The Zupancic and the Malay reference does not disclose a thermal-stabilizing filler material of more than 10 weight

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percent. However, the Doose reference discloses seals comprising polytetrafluoroethylene and 15% to 25% E-glass filler are capable of withstanding pressure forces of 2800 psi. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate 15% to 25% of E-glass as disclosed by the Doose reference into sealing gasket comprising polytetrafluoroethylene or chlorotrifluoroethylene as the glass filler material in order to have a sealing gasket with sufficient pressure strengths as disclosed by the Malay reference to withstand electrolyte creepage and reducing corrosion of the electrochemical cell as disclosed by the Zupancic reference.

Regarding claim 6, the Zupancic reference discloses a second sealant material made of chlorotrifluoroethylene disposed within the tubular member over the force-fitted member and the area of the housing defining the vent orifice surrounded by the tubular member.

Regarding claims 7-9, 11, the Zupancic reference discloses a pressure relief vent member with orifice, a corrosion-resistant polytetrafluoroethylene liner in which a ball (Applicant's plug) is placed and sealant in between the liner and orifice (Abstract, Applicants first thermoplastic seal member) which seals an aperture within the container and the cover comprises a hollow cylindrical shape.

Regarding claim 10, the Zupancic reference discloses the ball of the pressure relief vent is made of glass (Col. 5, lines 15-20)

Regarding claims 12 and 13, the Zupancic reference discloses a nonaqueous electrolytic solute in the electrochemical cell which is organic (Col. 6, Lines 50-60).

Regarding claims 14 and 15, the Zupancic reference discloses the preferred anode material is lithium (Col. 6, Lines 5-15) and  $\text{MnO}_2$  or iron disulfide cells (Col. 7, 50-60).

Regarding claim 22, the Zupancic reference discloses the liner of the vent member is compressed from 20-40 percent (Col. 5 lines 10-20). The reference further discloses the thickness of the liner to be 0.023 inches thick which is not between 0.006 and 0.015 thick as recited in the claimed recitation, however, it would have been obvious matter of design choice to change (some kind of size), since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art (*MPEP* 2144.04 (IV)).

It is noted that claims 22 are product-by-process claims. "Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F. 2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Since product is similar to that of the Applicant's, Applicant's process is not given patentable weight in this claim.

9. Claims 16, 17 and 23 are rejected under 35 U.S.C. 103(a) as unpatentable over Zupancic (US Patent 4,592, 970) in view of Malay et al. (US Patent 6,468,691) in further



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view of Doose (U.S. Patent 4,580,790) in further view of Turchan et al. (U.S. Patent 4,482,613).

The Zupancic in view of Malay et al. in further view of Doose discloses the claimed invention above and further discloses herein. However, the Zupancic in view of Malay et al. in further view of Doose does not disclose an organic solvent comprises at least 80 volume percent of one or more ethers having a boiling point not greater than 90 degrees Celsius. However, the Turchan et al. reference discloses a Li/MnO<sub>2</sub> cell, having a safety pressure vent and an organic electrolyte solvent is enhanced by, in conjunction with said vent, providing said organic electrolyte solvent with at least 80% by volume of a volatile component, such as dimethoxyethane, is preferably below 90 .degree. C. (Col. 1, lines 45-55) Upon cell venting, under abuse conditions, the cell is thereby rapidly evacuated and safely rendered inoperable under further abuse conditions. Therefore, it would been obvious to incorporate an organic electrolyte solvent of 80% or more with a boiling point of below 90 degrees Celsius as disclosed by Turchan et al. reference in the Li/MnO<sub>2</sub> electrochemical cell with a pressure safety vent as disclosed by Zupancic in view of Malay et al. in further view of Doose in order to prevent any conditions which would attributed to the fact that upon cell venting at an elevated temperature and pressure the volatile electrolyte solvent is sufficiently vaporized to be rapidly evacuated from the cell during venting in order to cause cell operation is therefore safely substantially shut down within a short period of time after venting.

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10. Claims 19, 24 and 25, are rejected under 35 U.S.C. 103(a) as unpatentable over Zupancic (US Patent 4,592, 970) in view of Malay et al. (US Patent 6,468,691) in further view of Doose (U.S. Patent 4,580,790) in further view of Yoshinaka et al. (US Patent 5,183,594)

The Zupancic in view of Malay et al. in further view of Doose discloses the claimed invention above and further discloses herein but does not specifically state an ethylene-polytetrafluoroethylene, however, the Yoshinaka et al. reference discloses thermoplastic resins includes compounds such ethylene/tetrafluoroethylene and TEFLON (polytetrafluoroethylene. The substitution of known equivalent structures such as polytetrafluoroethylenes and chlorotrifluoroethylene involves only ordinary skill in the art. *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *In re Ruff* 118 USPQ 343 (CCPA 1958). When a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result. **KSR v. Teleflex**

### ***Response to Arguments***

Applicant's arguments filed June 23, 2008 have been fully considered but they are not persuasive.

The Applicant's principal arguments are:

A) The Applicants argue, "*In order to anticipate a claim, each and every element as set forth in the claim must be found, either expressly or inherently described, in a*

*single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631 (Fed. Cir. 1987); M.P.E.P. § 2131. Claims 1, 2, 6-9, 11 and 12 all require a first thermoplastic seal member comprising a thermoplastic resin and more than 10 weight percent of a thermal-stabilizing filler. Based on Applicants' review of Schubert, it appears that the only disclosure relating to fillers is in the Background of the Invention, which states:*

*To reduce the rate of stress relaxation, fillers such as talc, calcium carbonate, carbon black, silica, and the like have been added to the seal member material. However, even when this is done, the stress relaxation rate may still be higher than desirable. Mineral fillers also tend to be distributed non-uniformly after molding, which can lead to non-uniform seal member properties, defects and cell sealing deficiencies.*

*(Schubert at ¶ [0006] (emphasis added)). First, although fillers are mentioned in the "Background of the Invention" in Schubert, there is not a disclosure that the fillers are used in the Schubert electrochemical cell, much less in any electrochemical cell. The above cited portion relating to fillers is a general discussion, without specifically stating in what type of application the fillers and seal member materials were used.*

*Second, the above cited portion of Schubert does not mention the amount of the filler that was used, much less a disclosure that the filler comprises more than 10 weight percent. Accordingly, Applicants respectfully submit that Schubert does not anticipate claims 1, 1, 2, 6- 9, 11 and 12 for the foregoing reasons"*

However, as it is rejected the Examiner is not using the background of the prior art Shubert 2003/0118902 A1 herein referred as Shubert '902. As it is rejected the

Shubert '908 reference specifically discloses a 30 weight percent of thermoplastic material (Applicants thermoplastic-stabilizing filler) balanced polyphenylene sulfides as a thermoplastic resin. Polyphenylene Sulfides are known to be thermoplastic resin and as it is suggested in Page 13, lines 14-20. Claim 1 does not specify a particular type of thermoplastic stabilizing filler. MPEP 2106 II C states *“USPTO personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure. In re Morris, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim should not be read into the claim. E-Pass Techs., Inc. v. 3Com Corp., 343 F.3d 1364, 1369, 67 USPQ2d 1947, 1950 (Fed. Cir. 2003) (claims must be interpreted “in view of the specification” without importing limitations from the specification into the claims unnecessarily). In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969). See also In re Zletz, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989)”* The Shubert '902 discloses that the polyolefins are made of polypropylene. Polypropylene are known in the art to be thermoplastics and also it is known in the art to have polypropylene fillers, therefore by broadest interpretation of thermoplastic stabilizing fillers, polypropylene are known to be thermoplastic fillers or thermoplastic-stabilizing fillers.

B) The Applicant argues, *“Applicants respectfully assert that it would not have been obvious to one of ordinary skill in the art to combine the teachings of Zupancic, Doose and Malay to arrive at the claimed invention. The Examiner recognizes that Zupancic and Malay, the references which specifically address electrochemical cells, do not disclose a thermal-stabilizing filler material of more than 10 weight percent. The only*

*reference that the Examiner cites for teaching the "more than 10 weight percent thermal-stabilizing filler" limitation is Doose, which relates to reciprocating and/or rotating surfaces, particularly for rotating shafts and rider rings for use in sealing reciprocating pistons such as those commonly found in pumps, compressors, and as bearing pads used to support bridges and high rise buildings. (Doose, col. 1 11. 14-29). Based on Applicants' review of Doose, Applicants are unable to find any reference indicating or even suggestion that the teachings of Doose would be applicable to an electrochemical cell."* However the Doose reference was not used to illustrate "electrochemical cells" the Zupancic and the Malay reference was used to reject the claimed recitation "electrochemical cells;" the Doose reference was used to indicate PTFE using 15-25% E-glass fillers are known to one of ordinary skill in the art and it withstand pressures between 2000-3000, the very same pressures needed to withstand compressive forces as required by Malay for use in electrochemical cells.

C) The Applicant argues," *Moreover, Applicants assert that one of ordinary skill in the art would not have combined Zupancic with Doose for an additional reason. Each of the claims requires that the seal member provide a pressure relief from the cell to allow it to vent. Zupancic teaches that the liner and seal member are "resiliently deformable such that said member is adapted to be at least partially expelled from the vent orifice upon a predetermined internal gas pressure buildup within the cell to provide a permanent vent for the cell." (Zupancic, col. 3 11.28-35 (emphasis added)). In contrast, Doose teaches that the purpose of incorporating filler in the PTFE is to "prevent the PTFE from becoming deformed during continued use." (Doose, col. 1 11.*

37-39 (*emphasis added*)). *The prevention of deformation is contrary to venting which essentially involves deformation of the seal. Accordingly, Applicants submit that one of ordinary skill in the art would not have combined the Doose seal, which prevents the PTFE from deforming, with the Zupancic cell, which needs to deform the seal to vent, to arrive at the claimed invention*" However, the Applicants are not arguing the rejection in which the claims are rejected under. The rejection as rejected by the Examiner is under U.S.C 103 (a) as unpatentable over Zupancic in view of Malay in further view of Doose and not Zupancic in view of Doose. In addition to, the phrases "deformable" and/or deformed are relative terms. The Doose reference does recognize that PTFE seals are not easily deformed, however the tensile strength of PTFE filled with E-glass is lower than pure PTFE (Column 1, lines 50-55). The Zupancic reference discloses PTFE and that PTFE is resiliently deformable therefore, the PTFE seals with E-glass, according to the Zupancic reference, must be more resiliently deformable than PTFE alone and therefore according to the Applicants arguments the PTFE seals with E-glass is applicable to the disclosure of Zupancic.

D) The Applicants argues, " *However, Applicants respectfully assert that Doose teaches away from utilizing E-Glass since it states:*

*When PTFE seals utilizing E-Glass as the filler material are used as a seal or support between metal parts or other materials having a similar or lower hardness than the E-Glass, considerable wear debris is generated during movement of the parts. This is an especially critical problem in expensive compressor and pump equipment where the generation of wear debris between the E-Glass reinforced PTFE and metal parts*

*results in premature failure of the equipment requiring tear-down, inspection and rebuilding of the apparatus.*

*It would be desirable to provide a PTFE material having a suitable alternative filler material which provides adequate structural strength to the PTFE and resistance to cold creep, while at the same time limiting the amount of wear debris generated between the PTFE and the surfaces which rub against the PTFE during operation of the equipment.*

*(Doose, col. 1 11. 50-65 (emphasis added)). Applicants submit that, based on the above disclosure of Doose, one having ordinary skill in the art would have been discouraged from incorporating E-glass as a filler to arrive at the claimed invention. Accordingly, Applicants assert that claims 5 and 21 are allowable for this additional reason"*

Again, the Applicants are not arguing the rejection in which the claims are rejected under. The rejection as rejected by the Examiner is under U.S.C 103 (a) as unpatentable over Zupancic in view of Malay in further view of Doose and not Zupancic in view of Doose as it is argued by the Applicants. The Doose reference was used to indicate PTFE using 15-25% E-glass fillers are known to one of ordinary skill in the art and it withstand pressures between 2000-3000, the very same pressures needed to withstand compressive forces as required by Malay for use in electrochemical cells. The seals to withstand these compressive forces are PTFE or chlorotrifluoroethylene with glass filler seals to obviate creepage of the electrolytes. These seals are improvements over regular PTFE or chlorotrifluoroethylene and provide motivation. The Zupancic

reference discloses a similar problem with electrolyte creepage while using regular PTFE or Chlorotrifluoroethylene.

### ***Conclusion***

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helen O. Chu whose telephone number is (571) 272-5162. The examiner can normally be reached on Monday-Friday 8am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HOC

/PATRICK RYAN/  
Supervisory Patent Examiner, Art Unit 1795